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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/585,355

07/06/2006

Takayuki Ohmura

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7590

08/18/2009

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ALEXANDRIA, VA 22320-4850

EXAMINER

BREVAL, ELMITO

ART UNIT

PAPER NUMBER

2889

MAIL DATE

DELIVERY MODE

08/18/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,355	Applicant(s) OHMURA ET AL.	
	Examiner ELMITO BREVAL	Art Unit 2889	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, 12 and 13 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 8-11 and 14-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/06/2006; 06/18/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 7, 12, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohmura et al., (US. Pat: 5, 616,987) of record by the applicant.

Regarding claim 1, Ohmura ('987) teaches (in at least figs. 7-9; figs. 8 and 9 are enlarged view of fig. 7) a photomultiplier tube comprising: a vacuum chamber constructed from a substantially spherical light-receiving surface (1), a bulb portion (2), and a cylindrical stem portion (3) serving as a stand base; a photoelectric cathode (5) is formed on the inner surface of the light receiving surface (1); a plurality of dynodes (dy1, dy) multiplying electrons emitted from the cathode; and a plate electrode (10; i.e. the potential regulating means) disposed in prescribed position in relation to an edge of a first dynode (dy1; best seen in figs. 8 and 9), and equipotential surface (S) in a space between the first dynode (dy1) and the group of dynodes (dy) which includes (dy2) along a longitudinal direction of the first dynode (dy1).

Regarding claim 2, Ohmura ('987) teaches (in at least figs. 8 and 9) the plate electrode (10; i.e. the potential regulating means) disposed between the edge of the first dynode (dy1) and the edge of the group of dynodes (dy; note: dy contains dy2 up dy9) and arranged substantially parallel to a side wall of the first dynode (dy1) and separated

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from the first dynode (dy1); a 720 volts is applied to the plate electrode to produce an higher potential than the potential of the first dynode (dy1) which is 704v (col. 6, lines 32-40).

Regarding claim 3, Ohmura ('987) teaches (in at least figs. 8 and 9) the plate electrode (10; i.e. the electron lens forming electrode) is electrically connected to the edge of the group electrode (dy; since dy includes dy2 to dy9, it is considered within Ohmura's disclosure that the plate electrode 10 is also electrically connected to the edge of dy3).

Regarding claim 4, Ohmura ('987) teaches (in at least figs. 8 and 9) the plate electrode (10; i.e. the electron lens forming electrode) is separated from the plurality of dynodes (dy).

Regarding claims 7, 12, and 13 Ohmura ('987) teaches (in at least figs. 5, 7, 8, and 9; the cathode, vessel, plate electrode do not label in fig. 5; figs. 8 and 9 are enlarged view of fig. 7) the cathode (5 of fig. 7) the dynodes (113, 114, 115), and the plate electrode (10 of fig. 8 and 9) are disposed in a hermetically sealed vessel (1) that is cylindrical in shape and sealed on both ends; the light enters the hermetically sealed vessel (1) from one end thereof; dynodes (113, 114, 115 of fig. 5) are concave and substantially arc-shaped, the first dynode (113) opening substantially toward the one end of the hermetically sealed vessel (1), the second dynode (114) opening substantially toward another end of the hermetically sealed vessel (1) and the third dynode (115) opening substantially toward the one end of the hermetically sealed vessel (1), and the electrons impinge on and are emitted from inner surfaces of the

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dynodes; the lens forming electrode (10; i.e. the plate electrode) forms a fan shape (the examiner interprets the shape of the plate electrode to be a fan shape).

Allowable Subject Matter

Claims 5, 6, 8-11, 14-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 5, 8 and 9, the prior art of record fails to teach a second electrode lens forming electrode disposed between an edge of the second dynode and an edge of the third dynode and arranged substantially parallel to the electron lens forming electrode and separated from the second dynode; and wherein a voltage is applied to the second electron lens forming electrode to produce a higher potential than the potential in the second dynode. Due to their dependency, claims 6, 10, 11, 14-19 are necessarily allowable.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELMITO BREVAL whose telephone number is (571)270-3099. The examiner can normally be reached on M-F (8:30 AM-5:00 Pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Toan Ton can be reached on (571)-272-2303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elmito Breval/
Examiner, Art Unit 2889

/Toan Ton/
Supervisory Patent Examiner, Art Unit 2889

August 13, 2009